

REMARKS

The Office Action mailed March 30, 2007, has been received and reviewed. Claims 1 through 25 and 40 are currently pending in the application, of which claims 1 through 3, 8 through 10, 13, 20 through 25 and 40 are currently under examination. Claim 7 has been objected to as being dependent upon rejected base claims, but the indication of allowable subject matter in such claims is noted with appreciation. Claims 4 through 6, 11, 12 and 14 through 19 are withdrawn from consideration as being drawn to a non-elected invention. Claims 1 through 3, 8 through 10, 13, 20 through 25 and 40 stand rejected.

Applicants respectfully request reconsideration of the application in view of the arguments set forth hereinbelow.

35 U.S.C. § 102(b) Anticipation Rejections

Applicants note that two separate anticipation rejections based on Slysh (U.S. Patent No. 4,337,560) are set forth in the body of the Office Action. The first rejection is set forth on page 2 of the Office Action wherein claims 1 through 3, 8, 9, 13, 21, 25, and 40 are rejected as being anticipated by Slysh. The second rejection is set forth on page 3 of the Office Action wherein claims 1, 8 and 10 are rejected as being anticipated by Slysh. For sake of clarity and consistency, each rejection is addressed hereinbelow in the order set forth in the Office Action.

Anticipation Rejection Based on U.S. Patent No. 4,337,560 to Slysh

Claims 1 through 3, 8, 9, 13, 21, 25 and 40 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Slysh (U.S. Patent No. 4,337,560). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, "[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency

of the result or characteristic.” See MPEP 2112, summarizing *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1967 (Fed. Cir. 1993). Also, “[i]n relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” See MPEP 2112, quoting *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

Claims 1 through 3, 8, 9, 13, 21 and 25

Independent claim 1 of the presently claimed invention is directed to a deployable truss. The deployable truss of claim 1 comprises: a plurality of column members connected at their ends to form a deployable truss that forms a rigid structure in a deployed state and that has a stowage volume less than its deployed volume in a collapsed state, wherein at least some of the plurality of column members comprise column assemblies including a plurality of strut members, *each strut member of an associated column assembly being connected to each other strut member of the associated column assembly at a first end of the column assembly and at a second end of the column assembly.*

The Examiner cites Slyph as showing a deployable truss comprising: “a plurality of column members (figure 14) connected at their ends to form a deployable truss that forms a rigid structure in a deployed state and that has a stowage volume less than its deployed volume in a collapsed state, at least some of the plurality of column members comprise column assemblies including a plurality of strut members (figure 14 the top and bottom parts 21), each strut member of an associated column assembly being connected to each other of the associated column assembly at a first end of the column assembly and at a second end of the column assembly (see figure 14).” (Office Action, page 2).

Applicants respectfully disagree with the Examiner’s characterization of Slyph with regards to FIG. 14. Particularly, Applicants submit that FIG. 14 does not represent a plurality of column members as stated by the Examiner. The description of FIG. 14 states that it is “a perspective view of a fixed geometry strut having a hat cross section.” (See Col. 3, lines 27-28). Furthermore, Applicants submit that Slyph does not describe “top and bottom parts 21” as stated

by the Examiner, implying that such “top and bottom parts” are individual struts. Instead, Slysh describes element 21 as a single strut structure. More specifically, Slysh states that part 21 is “a fixed geometry strut” of a “generally hat-shaped cross-section” which “tapers towards each end from a maximum cross section at strut mid point.” (See Col. 6, lines 29-32). Furthermore, Slysh refers to “both ends of the strut” rather than a plurality of struts when describing FIG. 14 (See Col. 6, line 32, emphasis added). Applicants find no description by Slysh, nor has the Examiner pointed to any specific description therein, stating that the component shown in FIG. 14 includes a plurality of struts arranged in the manner recited by claim 1 of the present invention. Thus, Applicants submit that Slysh fails to expressly or inherently describe “column assemblies including a plurality of strut members...connected to each other...at a first end of the column assembly *and* at a second end of the column assembly,” as recited in claim 1.

Thus, Applicants submit that Slysh does not describe, either expressly or inherently, “column assemblies including a plurality of strut members...connected to each other...at a first end of the column assembly *and* at a second end of the column assembly,” as recited in independent claim 1. As such, applicants assert that claim 1 is not anticipated by Slysh and respectfully request that the Examiner withdraw the rejection of independent claim 1 under 35 U.S.C. § 102(b).

Applicants additionally assert that each of dependent claims 2, 3, 8, 9, 13, 21 and 25 are allowable at least because each depends from claim 1, which is allowable. Therefore, Applicants assert that claims 2, 3, 8, 9, 13, 21 and 25 are not anticipated by Slysh and respectfully request that the Examiner also withdraw the rejection of dependent claims 2, 3, 8, 9, 13, 21 and 25 under 35 U.S.C. § 102(b).

Claim 40

Independent claim 40 is also directed to a deployable truss. The deployable truss of claim 40 comprises: a plurality of contiguously attached deployable bays forming a rigid space truss when in a deployed state and having a stowage volume substantially less than their deployed volume when in a collapsed state, each bay comprising a plurality of column members, wherein at least some of the plurality of column members comprise column assemblies having a

centerline; and wherein each column assembly comprises *a plurality of strut members*, each strut member being *connected to each other strut member at a first end of the column assembly and at a second end of the column assembly*, the plurality of strut members being substantially symmetrically arranged about the centerline of the column assembly.

The Examiner states that “Slysh (figures 4, 140) shows a deployable truss comprising a plurality of contiguously attached deployable bays forming a rigid space truss when in a deployed state and having a stowage volume substantially less than their deployed volume when in a collapsed state, each bay comprising a plurality of column members (figure 14), at least some of the plurality of column members comprising column assemblies having a centerline, each column assembly comprising a plurality of struts (figure 14, parts 21 top and bottom), each strut member being connected to each other strut member at a first end of the column assembly and at a second end of the column assembly, the plurality of strut members being substantially symmetrically arranged about the centerline of the column assembly.” (Office Action page 3).

Applicants submit that Slysh does not describe a plurality of struts configured in the manner set forth in claim 40. Instead, Slysh describes part 21 as a single strut structure. Slysh states that part 21 is “a fixed geometry strut” of a “generally hat-shaped cross-section” which “tapers towards each end from a maximum cross section at strut mid point.” (See Col. 6, lines 29-32). Furthermore, Slysh refers to “both ends of the strut” rather than a plurality of struts in describing FIG. 14 (See Col. 6, line 32, emphasis added). Applicants find no description by Slysh, nor has the Examiner pointed to any specific description therein, stating that the component shown in FIG. 14 includes a plurality of struts arranged in the manner recited by claim 40 of the present invention. Thus, Slysh fails to expressly or inherently describe column assemblies wherein “each column assembly comprises a plurality of strut members...*connected to each other...* at a first end of the column assembly *and* at a second end of the column assembly,” as recited in claim 40.

As discussed above, Slysh does not describe column assemblies comprising “a plurality of strut members, each strut member being connected to each other strut member at a first end of the column assembly and at a second end of the column assembly,” as recited in independent claim 40. As such, applicants assert that claim 40 is not anticipated by Slysh and respectfully

request that the Examiner withdraw the rejection of independent claim 40 under 35 U.S.C. § 102(b).

Anticipation Rejection Based on U.S. Patent No. 4,337,560 to Slysh

Claims 1, 8 and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Slysh (U.S. Patent No. 4,337,560). Applicants respectfully traverse this rejection, as hereinafter set forth.

As stated above, claim 1 recites, in part, “each strut member of an associated column assembly being connected to each other strut member of the associated column assembly *at a first end of the column assembly and at a second end of the column assembly.*”

The Examiner once again cites Slysh as showing a deployable truss. In this specific rejection of claims 1, 8 and 10, the Examiner states that “Slysh (figures 5, 1-9) shows a deployable truss comprising a plurality of column members (figure 5) connected at their ends to form a deployable truss that forms a rigid structure in a deployed state and that has a stowage volume less than its deployed volume in a collapsed state, at least some of the plurality of column members comprising column assemblies including a plurality of strut members (figure 9 shows the struts separated by the hinge and the other border at 16), each strut member of an associated column assembly being connected to each other strut member of the associated column assembly at a first end of the column assembly and at a second end of the column assembly (see figure 7).” (Office Action pages 3-4).

The Examiner gives no explanation or showing, more than “see figure 7,” as to how Slysh describes “each strut member of an associated column assembly being connected to each other strut member of the associated column assembly at a first end of the column assembly and at a second end of the column assembly,” as recited in claim 1. (See Office Action page 5).

FIG. 7 of Slysh shows the strut illustrated in FIG. 6 while the strut is in a compressed state. (See Col 3, line 8). The strut 12 of FIGS. 6 and 7 is formed of two conical shells joined together at their bases. (See Col. 5, lines 29-32). These two shells are not joined together at any other location. Thus, there is no connection to each other “*at a first end of the column assembly and at a second end of the column assembly,*” as recited in claim 1.

The Examiner relies on FIG. 9 of Slysh in an effort to show a plurality of strut members. FIG. 9 illustrates sides 14 and 15 of strut 12 being attached together with a longitudinal hinge 16. (See Col. 5, lines 34-36). Applicants note, however, that FIG. 9, and its related description does not describe the connection of a *plurality* of strut members at “a first end of the column assembly and at a second end of the column assembly.” FIG. 9 describes “the strut” rather than a plurality of strut members (Col. 3, line 23). Similarly, Slysh describes the component of FIG. 6 as a single strut 12 consisting of two conical shells joined together at their bases, each shell includes sides 14 and 15 hingedly coupled to one another. (Col. 5, lines 29-32, 34-36).

While one might argue that the component in FIG. 6 includes two conical struts coupled at their respective bases, such a construction still fails to anticipate claim 1 of the presently claimed invention since the two conical portions are not connected to each other at their “second ends.”

Furthermore, if one were to consider each half of the conical member as being a “strut” (which, Applicants submit is contrary to Slysh’s own description), such an interpretation would still fail to meet all of the limitations of claim 1 since each of the four members are not connected to each other member at a first end of the column assembly *and* connected to each other member at a second end of the column assembly. Thus, Applicants submit that Slysh clearly fails to describe “*each strut member* of an associated column assembly being connected to *each other strut member*,” as recited in claim 1.

Thus, Applicants submit that Slysh does not describe, either expressly or inherently, “*each strut member* of an associated column assembly being connected to *each other strut member* of the associated column assembly *at a first end of the column assembly and at a second end of the column assembly*,” as recited in independent claim 1. Furthermore, examiner has not provided a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of Slysh. Applicants assert that claim 1 is not anticipated by Slysh and respectfully request that the Examiner withdraw the rejection of independent claim 1 under 35 U.S.C. § 102(b).

Applicants additionally assert that each of dependent claims 8 and 10 is allowable at least because such claims depend from claim 1, which is allowable. Therefore, Applicants assert that

claims 8 and 10 are not anticipated by Slysh and respectfully request that the Examiner also withdraw the rejection of dependent claims 8 and 10 under 35 U.S.C. § 102(b).

Anticipation Rejection Based on U.S. Patent No. 4,557,083 to Zanardo

Claims 1 and 20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Zanardo (U.S. Patent No. 4,557,083). Applicants respectfully traverse this rejection, as hereinafter set forth.

As previously discussed, claim 1 recites, in part, “each strut member of an associated column assembly being connected to each other strut member of the associated column assembly *at a first end of the column assembly and at a second end of the column assembly.*”

The Examiner cites Zanardo as showing “a deployable truss comprising a plurality of column members (figure 1 shows a column member made up of two struts 8) connected at their ends to form a deployable truss that forms a rigid structure in a deployed state and that has a stowage volume less than its deployed volume in a collapsed state, at least some of the plurality of column members comprising column assemblies including a plurality of strut members (each column having two struts), each strut member of an associated column assembly being connected to each other of the associated column assembly at a first end of the column assembly and at a second end of the column assembly (through part 13).” (Office Action pages 4-5).

Zanardo describes an extensible arm in which rods 8 are connected together in their respective centers by rotary couplings. The Examiner relies on FIG. 1 to show that the rods 8 are connected to each other through parts 13. However, Applicants disagree with the Examiner's characterization of Zanardo with respect to FIG. 1.

Considering both FIGS. 1 and 2, rods 4 are configured to constitute diagonals 13. (See Col. 2, lines 60-63). FIG. 2 illustrates that the pair of rods 8 (cited by the Examiner as being a plurality of struts) are only connected to rods 4 at a single end of each column assembly. Nowhere does the pair of rods 8 appear to be connected to the same rod 4. Nor do the rods 8 appear to be coupled to each other at both first ends and second ends of a given column assembly. Thus, Applicants submit that Zanardo fails to expressly or inherently describe “each strut member of an associated column assembly being connected to each other strut member of the associated column

assembly at a first end of the column assembly and at a second end of the column assembly.”

As such, applicants assert that claim 1 is not anticipated by Zanardo and respectfully request that the Examiner withdraw the rejection of independent claim 1 under 35 U.S.C. § 102(b).

Applicants additionally assert that dependent claim 20 is allowable at least because it depends from claim 1, which is allowable. Therefore, Applicants assert that claim 20 is not anticipated by Zanardo and respectfully request that the Examiner also withdraw the rejection of dependent claim 20 under 35 U.S.C. § 102(b).

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 4,337,560 to Slysh

Claims 22 through 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Slysh (U.S. Patent No. 4,337,560). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

An obviousness rejection for a dependent claim is proper only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Claims 22 through 24 each depend from independent claim 1. As discussed above, Slysh fails to teach or suggest all of the limitations recited in claim 1. Specifically, Slysh fails to teach or suggest that “at least some of the plurality of column members comprise column assemblies including a plurality of strut members, each strut member of an associated column assembly being connected to each other strut member of the associated

column assembly at a first end of the column assembly and at a second end of the column assembly,” as recited in independent claim 1. Therefore, Applicants assert that claim 1 would not have been obvious to a person of ordinary skill in the art at the time the invention was made considering Slyph.

The nonobviousness of independent claim 1 precludes a rejection of claims 22 through 24, which depend therefrom, because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to claims 22 through 24.

Objections to Claim 7/Allowable Subject Matter

Claim 7 stands objected to as being dependent upon a rejected base claim, but is indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form. Applicants submit that claim 1, from which claim 7 depends, is in condition for allowance and, therefore, that claim 7 is likewise in condition for allowance.

CONCLUSION

Claims 1-25 and 40 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'B. B. Jensen', followed by a horizontal line extending to the right.

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